NEWYORK–PRESBYTERIAN
DIGESTIVE DISEASES

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Fall 2007

EUS Provides New View of Pancreas

For patients with pancreatic tumors, clinical management has become increasingly complex, with the advances in surgical, oncologic, and endoscopic techniques. At NewYork-Presbyterian Hospital, endoscopic ultrasound (EUS) is not only vital to providing surgeons with crucial information regarding treatment options for patients with pancreatic diseases, but it is also expanding therapeutic options.

Pancreatic cysts are increasingly identified and referred for evaluation. EUS is used both to image the cyst for morphology and to aspirate fluid for analysis by cytology and chemistries. In addition to routine studies, in borderline cases fluid can be sent for DNA analysis to determine a variety of features, including the DNA content and quality, the presence of K-ras mutations and the loss of heterozygosity, according to Peter D. Stevens, MD. The Hospital has established a database of all pancreatic cysts for ongoing study. "It's very important that we study these cysts over time so we can recognize their natural history," added Mark Pochapin, MD.

Therapeutic interventions are also being developed for EUS. EUS guidance has been used to inject alcohol into cysts, which causes them to regress. "It looks favorable in the correct subset of patients," said Felice Schnoll-Sussman, MD. "You have to be very selective of the patient population. This would be an appropriate procedure to contemplate for patients who have a truly defined

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Hospital Researchers Pursue Incisionless Endoscopic Surgery

In recent years, rapidly emerging technologies and improved techniques have brought minimally invasive endoscopic surgery closer to a once-elusive goal: incisionless surgery. At the forefront of this trend, Columbia and Weill Cornell physicians at NewYork-Presbyterian Hospital have been developing NOTES™ (natural orifice translumenal endoscopic surgery) in both research and clinical settings.

NOTES uses various body orifices as points of entry, including the vagina, rectum, and mouth, instead of initiating an operation from the skin. The hope is that NOTES which is being even less invasive than laparoscopic surgery, will be able to reduce or eliminate pain, leave no scars, and shorten recovery time. Possible applications include appendix operations and biopsies, as well as more significant operations such as removing parts of the stomach and intestine. The method challenges the basic paradigm of surgery: the idea that cutting across the lumen of an organ into the patient's abdominal cavity is to be avoided.

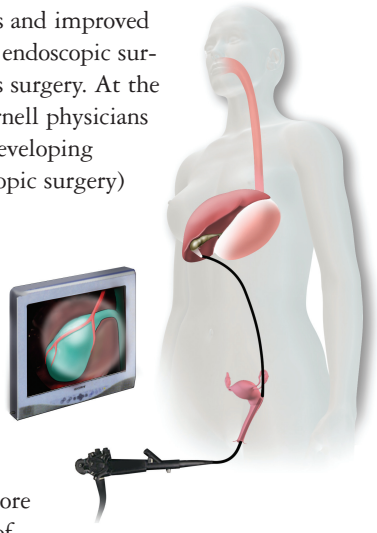

Photo courtesy of Mark Bessler, MD

NewYork-Presbyterian Hospital used NOTES techniques and laparascopic assistance to complete the first flexible endoscopic transvaginal cholecystectomy in the United States.

"Surgeons are always taught not to cross those walls unless they're operating on that specific organ," said Marc Bessler, MD. "The big issue we've addressed is how to close the organ you're going through, safely."

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UPDATES

Update in Gasteroenterology, Hepatology & Nutrition
November 30 & December 1, 2007

NewYork-Presbyterian Hospital First Annual International NOTES™ Course
December 10-11, 2007

Advances in Colorectal Cancer Therapies
Webcast
"Pure" laparoscopic versus "hand-assisted" laparoscopic surgery; new approaches to minimally invasive surgery.

Pediatric Capsule Endoscopy
Webcast

For more information, please visit www.nypdigestive.org

NewYork-Presbyterian
The University Hospital of Columbia and Cornell

New Drugs, Dosing Highlight New Approaches to Hepatitis C

The Center for the Study of Hepatitis continues to be actively involved in both clinical and basic science research in an effort to identify new treatments for patients infected with the hepatitis C virus (HCV). A multidisciplinary approach is central to efforts at the Center, which is a collaborative endeavor of Weill Cornell clinicians and researchers at NewYork-Presbyterian Hospital along with colleagues at NewYork-Presbyterian Hospital/Columbia University Medical Center and researchers at Rockefeller University. Clinical trials are conducted at a high level of quality using an extensive infrastructure. The Center is involved in a broad spectrum of trials ranging from Phase 1 (first in human) to the full gamut of later-stage trials—encompassing Phase I through Phase IV studies. Clinical investigators at the Center are also working with industry to help design early phase trials for drug testing, including first-in-human studies.

"We have nurse practitioners and nurses who are coordinators for our trials and work directly with our patients, and we have an extensive administrative and technical support staff," said Ira M. Jacobson, MD. In January 2007, according to Dr. Jacobson, a large space on the Digestive Disease floor of the new Weill-Greenberg Center was set aside to house the staff needed to support the administration and execution of clinical trials for hepatitis C.

"Ongoing and anticipated trials include those focusing on HCV protease and polymerase inhibitors, drugs with other novel mechanisms of action, and refinements of the currently used drugs interferon and ribavirin, such as albumin-bound interferon and taribavirin," said Dr. Jacobson.

Antiviral agents included in the HCV trials program are telapravir (VX-950), boceprevir (SCH-503034), HCV-796, GS-9190, and others.

Faculty members focused on hepatitis C and working in the new Weill-Greenberg Center, adjacent to NewYork-Presbyterian Hospital/Weill Cornell Medical Center, have built a large referral practice attracting patients from the surrounding New York metropolitan area. Several years ago Andrew Talal, MD, MPH, founded a liver clinic that specializes in the care of patients with HCV and patients who are coinfected with HIV/HCV. Dr. Talal has recently published novel findings derived from patient samples obtained at his clinic (*J Acquir Immune Defic Syndr* 2007;45:262-268). Other clinicians at the Center who see a large volume of patients with HCV include Dr. Jacobson, Maya Gambarin, MD, and Samuel Sigal, MD. Dr. Sigal is also a member of the Center for Liver Disease and Transplantation at NewYork-Presbyterian Hospital. In addition, Brian Edlin, MD, performs nationally recognized epidemiologic studies on hepatitis C.

NewYork-Presbyterian Hospital served as the central site in the WIN-R trial, the largest United States hepatitis C study to date. More than 4,900 patients at 225 centers nationwide took part in the WIN-R trial. The study led to a number of important findings, noted Dr. Jacobson, who served as principal investigator and was joined by co-principal investigator Robert Brown, Jr, MD, of NewYork-Presbyterian Hospital/Columbia University Medical Center and Medical Director of the Center for Liver Disease and Transplantation, which has a thriving clinical trials program in viral hepatitis and in other areas of hepatology, including transplantation. The WIN-R study found that weight-based dosing of ribavirin resulted in significantly higher rates of sustained virologic response than using a flat dose of ribavirin (44% vs. 41%; P=0.01). This was particularly true for patients with HCV genotype 1 (34% vs. 29%; P=0.004). The findings also revealed that 24 weeks of treatment was as effective as the standard 48 weeks of treatment for patients with HCV genotype 2 or 3. The shorter course of therapy also had better tolerability. Several publications derived from the WIN-R study are expected to be published in the peer-reviewed literature shortly.

"The philosophy here is similar to the philosophy behind weight-based dosing of chemotherapy," noted Dr. Brown. "We knew that weight-based dosing in hepatitis C therapy was important, because of the potential impact fat in the liver can have on disease progression and drug absorption. It just hadn't been proved. What we essentially found is that the additional risk for drug toxicity incurred with weight-based dosing is worth it given the increased efficacy."

When it comes to scientific research efforts, NewYork-Presbyterian Hospital continues to work closely with the Laboratory of Virology and Infectious Diseases at Rockefeller University, which focuses on HCV studies and is under the direction of Charles Rice, PhD. Research efforts include a current collaborative study examining whether patients with undetectable virus who complete treat-

Table. Sustained Virologic Response With Ribavirin

Ribavirin (mg/d)	All, (%)	Genotype 1, (%)	Genotype 1 With High Viral Load, (%)	Genotypes 2 and 3, (%)
800 to 1400, weight-based dose	44	34	32	62
800, fixed dose	41	29	27	60

Source: Jacobson I, Brown Jr. R, Freilich B, et al, the WIN-R Study Group. Weight based ribavirin dosing (WBD) increases sustained viral response (SVR) in patients with chronic hepatitis C (CHC): final results of the WIN-R study, a U.S. community-based trial. Hepatology. *2007. In press.*

ment with interferon and ribavirin are cured or whether tiny traces of the virus can still be found. Other ongoing collaborative studies involving Dr. Rice and Lynn Dustin, PhD, at Rockefeller University, are examining how the immune system interacts with the HCV.

Because HCV-associated end-stage liver disease is the leading indication for liver transplantation in the United States, studies to better understand how the virus affects the liver are also ongoing. NewYork-Presbyterian Hospital's liver transplant program performed more liver transplants in 2006 than any other hospital in the New York metropolitan area. Researchers at NewYork-Presbyterian/Weill Cornell and the Center for Liver Disease and Transplantation at NewYork-Presbyterian/Columbia have spearheaded efforts to acquire large samples of liver tissue from transplant patients at the Columbia site to determine the percentage of liver cells that are infected and the viral count in infected cells. The acquired specimens are sent to colleagues at Rockefeller University. "These are precious samples because they yield large amounts of tissue as opposed to small liver biopsy specimens," said Dr. Jacobson. In addition, researchers at NewYork-Presbyterian/Columbia are also studying several new agents for the treatment of hepatitis C, including the protease inhibitor VX-950, potentially the first oral HCV treatment, and a drug Dr. Brown calls "the next big step forward."

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NewYork-Presbyterian Digestive Diseases

is a publication of the Digestive Diseases Centers of NewYork-Presbyterian Hospital. The Digestive Diseases Centers are at the forefront of research and practice in the areas of gastroenterology; GI surgery; and liver, bile duct, and pancreatic disorders. NewYork-Presbyterian Hospital/Columbia University Medical Center and NewYork-Presbyterian Hospital/Weill Cornell Medical Center are respectively affiliated with Columbia University College of Physicians and Surgeons and Weill Cornell Medical College.

NewYork-Presbyterian Digestive Diseases Editorial Board

Hospital Researchers Create New Esophageal Disorders Center

Esophageal cancer rates have risen 600% since 1975, with the American Cancer Society predicting that 15,560 people will be diagnosed with esophageal cancer in 2007. To address this crucial public health need, physicians at NewYork-Presbyterian Hospital have collaborated to create the new Esophageal Disorders Center.

"We have a number of physicians—including gastroenterologists, surgeons, radiation oncologists, and medical oncologists—who are working together on the spectrum of disease from gastroesophageal reflux disease (GERD) to Barrett's esophagus (BE) to esophageal cancer," said Marc Bessler, MD.

The underlying philosophy of the Center is to treat patients for esophageal disorders as early and as noninvasively as possible. Additional team members include Peter D. Stevens, MD (interventional gastroenterology), Joshua Sonett, MD (thoracic surgery), Mark Stoopler, MD (oncology), Shermian Woodhouse, MD (radiation oncology), David D. Markowitz, MD (esophageal function), Charles Lightdale, MD (gastroenterology/BE), and Julian Abrams, MD (gastroenterology/BE).

Most esophageal adenocarcinoma originates from damage caused by acid reflux. For these patients, NewYork-Presbyterian Hospital physicians can use a device called the NDO Plicator to recreate the valve at the gastroesophageal junction and limit acid reflux by 50% to 70%.

"Treatment for reflux by most physicians includes everything from over-the-counter to prescription medications, as well as diet and lifestyle modification," Dr. Bessler explained. "We can then go from medications that might not be helping to using other combinations of medication or endoscopic techniques."

If the endoscopic option is insufficient, patients can undergo fundoplication, a minimally invasive surgical therapy that wraps a small cuff of stomach around the esophagus to strengthen the sphincter. This procedure, which can be done laparoscopically, is approximately 95% effective at getting rid of reflux, according to Dr. Bessler.

In some patients with GERD, repeated contact with gastric acid transforms their esophageal cells from normal squamous epithelium to abnormal intestinalized columnar epithelium, a complication that is known as BE. Until recently, physicians mainly used photodynamic therapy to blast away the damaged cells. But Charles Lightdale, MD, has been at the forefront of developing a new device called Barrx, which first measures the esophagus' inner diameter with an endoscopic balloon, then ablates cells with radiofrequency energy. He recently participated in a multicenter trial, published in *Gastrointestinal Endoscopy* (2007;65:185-195), which found that Barrx can completely eliminate nondysplastic BE in 70% of patients at 1-year follow-up. Newer results show, with additional treatment, the complete removal of BE in 98% of patients, who were followed for 2.5 years.

"It's a very precise removal, so it doesn't damage the deeper layers of the esophageal wall," said Dr. Lightdale, who 3 years ago became the first physician in New York State to use Barrx. "Strictures, where the esophagus gets scar tissue, are very unusual."

For patients with BE who develop small nodules, specialists employ endoscopic ultrasound. The information from this diagnostic and staging tool is used to judge whether endoscopic mucosal resection (EMR) is appropriate. "Before we do endoscopic resection, we always do this to make sure it's not a big cancer we're just seeing the tip of," said Dr. Lightdale. The abnormal tissue removed during EMR can then be evaluated by a pathologist.

Among those patients who need to have cancer removed, minimally invasive esophagectomy can reduce the trauma, pain, and recovery time. The procedure involves several small incisions and the use of a scope, rather than making large incisions in the abdomen and chest.

Having BE greatly increases the risk of developing esophageal cancer. Currently, there are no proven ways to prevent this progression, so close surveillance is the only option. To examine a possible chemopreventive approach, Columbia and Weill Cornell researchers at NewYork-Presbyterian Hospital are involved in a multicenter Phase Ib study developed by the National Cancer Institute (NCI)–sponsored Cancer

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> "Polyphenon E holds particular promise for esophageal disorders."
>
> —*Felice Schnoll-Sussman, MD*

Table. Summary of Efficacy Results: Barrx Trial

Patients, n	70 (52 men, 18 women)
Mean patient age, years	55.7
Median symptom scores, 0-100 scale (day 4)	0
Cure Rate for BE at 12 mo*	70%

**N=69* *BE, Barrett's esophagus* *Source: Lightdale C. Gastrointest Endosc. 2007;65:185-195.*

Surgery Versus Endoscopy for Duodenal Polyps: Researchers Evaluate Options and Outcomes

Complications of duodenal polyps include duodenal perforation and pancreatitis, and failure to adequately treat carcinoma can be life-threatening for patients. As treatment modalities evolve, physicians must remain aware of these possibilities while trying to avoid excessively invasive approaches. The key to successful modern management of these problems, according to physicians and surgeons at NewYork-Presbyterian Hospital, is multidisciplinary teamwork.

"One of the strategies we employ is that the surgeons and the endoscopists work very closely together," said John Chabot, MD. "We review every case, and we come to a consensus decision about how to approach each lesion." Although endoscopy offers patients a quicker recovery without a large incision, the decision to use an endoscopic approach should not be based on this factor alone.

"It is great to do all of these things with minimal invasion and minimal recovery time, but if you push too far, you hurt people," cautioned Dr. Chabot, adding that complications can arise that result in death. "Size and location in the duodenum tend to predict whether we treat them with an operation or remove them endoscopically. When cancer is present, we almost always use traditional surgery. Sometimes, we will follow up an endoscopic resection with surgery if an unsuspected cancer is diagnosed."

A recent study, entitled "Characteristics of Duodenal Neoplasms that Impact the Decision of Endoscopic or Surgical Management: Experience at a Large, Tertiary Referral Center," by Dr. Chabot and colleagues Harold Frucht, MD, Stavros N. Stavropoulos, MD, Peter D. Stevens, MD, Caroline Hwang, MD, and Christopher DiMaio, MD, examined if size, location, and the histologic traits of duodenal lesions affect the decision regarding surgical or endoscopic management. The study findings were presented at this year's Digestive Disease Week.

The study consisted of a retrospective review of 158 patients who had biopsy-proven duodenal neoplasms between 2000 and 2005. The results indicated that ampullary lesions were more likely to contain advanced histology and be managed surgically than non-ampullary neoplasms. Non-ampullary lesions are more often treated endoscopically than surgically.

The study also found that patients with duodenal neoplasms undergoing surgery were more likely to have large, ampullary lesions with advanced histology than were patients undergoing endoscopic treatment. The mean size of lesions that were surgically removed was 25.6±7.3 mm, and the mean size of those removed endoscopically was 18.4±12.1 mm. In 85% of patients requiring surgery, the lesions were ampullary, whereas they were ampullary in 52% of patients who were endoscopically managed. Additionally, the study results indicated that advanced lesions are more likely to be large and ampullary and more likely to require surgical treatment than are less advanced lesions. The mean size of lesions with advanced histology was 27.4±13.1 mm, whereas the mean size of lesions with less advanced histology was 17.7±11.1 mm. Of the lesions with advanced histology, 61% were ampullary and 55% were managed surgically. Of those lesions with less advanced histology, 49% were ampullary and 19% were treated surgically. Endoscopic treatment was used in 22% of patients with advanced lesions and in 64% of patients with lesions of less advanced histology.

Currently, large periampullary duodenal neoplasms with advanced histology are often managed surgically rather than endoscopically. Dr. Chabot believes that with further advances in endoscopy, it will be possible to manage such lesions endoscopically, with surgery reserved for those proven to be cancerous.

"Certainly, as we get better at it and as new approaches develop, I think more and more of them will be handled endoscopically," noted Dr. Chabot. "It is important to have a very close working relationship between the endoscopist and the surgeon and for them to look at each case together because it's hard to reduce these decisions to specific guidelines and numbers. There's still some art that goes into it. These are challenging decisions, and it takes a close working relationship to do it well."

"It is important to have a very close working relationship between the endoscopist and the surgeon... because it's hard to reduce these decisions to specific guidelines...."

—John Chabot, MD

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Esophageal

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Prevention Clinical Trials Consortium. This randomized, double-blind, dose-escalation study is examining green tea extract's safety and efficacy in the prevention of esophageal cancer among patients with BE. The extract, Polyphenon E, which is a minimally caffeinated green tea mixture containing epigallocatechin-3-gallate (EGCG), has been shown to inhibit carcinogenesis in a variety of preclinical cell culture and animal models. The trial, which began recruiting patients in 2006, will study Polyphenon E in doses of 200, 400, and 600 mg, or a placebo, taken twice daily for 6 months. After the medication phase, patients will be followed for an additional 6 months to assess via endoscopy and biopsy how their BE changes over the year. Study results are expected in 2009.

"Polyphenon E holds particular promise for esophageal disorders," noted Felice Schnoll-Sussman, MD. "It has been shown to accumulate mainly in the gastrointestinal mucosa and is therefore felt to be a strong candidate for the prevention of gastrointestinal malignancies."

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EUS

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premalignant cyst in the pancreas who are either not candidates for surgery or who are reluctant to undergo surgery."

For inflammatory fluid collections such as pseudocysts and organized pancreatic necrosis, the use of EUS to guide endoscopic drainage makes it possible to drain most cysts directly into the GI tract without the need for surgery or external drainage catheters. Using similar techniques, EUS is being used to place stents directly from the stomach into the pancreatic duct or from the duodenum into the bile duct to provide drainage, according to Dr. Stevens. This procedure is being performed in patients whose anatomy is difficult because of the presence of a tumor and in those who have already undergone a resection such as a Whipple procedure.

EUS-guided therapeutic injection is finding increasing applications in the pancreas. The pain of some patients with advanced, unresectable pancreatic cancer can be managed with EUS-guided neurolysis of the celiac plexus. EUS is used to locate the celiac plexus and insert sclerosing agents, which ablate the nerve fibers and relieve pain, according to Dr. Schnoll-Sussman. Injection of other agents under EUS guidance is a possibility.

> "EUS has been perfected [so] that we can localize tumors and determine whether there is vascular invasion...."
>
> *—Mark Pochapin, MD*

"It is my hope for the future that we move forward to inject new chemotherapeutic agents," added Dr. Pochapin.

EUS continues to play an essential role in diagnostic analysis. It is used to detect cancer in small pancreatic masses that are not revealed by CT. When other imaging modalities suggest the presence of a pancreatic mass, EUS has good negative predictive value, and if a mass is confirmed by EUS, a biopsy specimen can be simultaneously obtained.

In patients at high risk for pancreatic cancer because of familial clustering, EUS is used to detect the earliest indications of cancer. At NewYork-Presbyterian/Columbia University Medical Center, Harold Frucht, MD, serves as the principal investigator of a study examining a registry of high-risk patients. Dr. Schnoll-Sussman, meanwhile, uses EUS and other diagnostic/screening modalities as principal investigator of the NewYork-Presbyterian/Weill Cornell Medical Center registry on familial pancreatic cancer. EUS also assists in the diagnosis of chronic pancreatitis. In patients with gallstone pancreatitis, EUS can be used to confirm the presence of stones in the common bile duct or gallbladder.

"In many patients who have had pancreatitis of unknown etiology, a large proportion of them actually have stone disease," said Dr. Schnoll-Sussman. "With EUS, we have a much more sensitive modality to be able to look at the common bile duct or gallbladder and clarify the diagnosis."

In addition to its diagnostic and therapeutic roles, EUS provides surgeons with crucial information regarding pancreatic surgery and treatment. "It helps surgeons make decisions as to who should have surgery, and it helps us make decisions, for example, about whether we should be considering preoperative chemotherapy,"

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Endoscopic

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This Spring at NewYork-Presbyterian Hospital/Columbia University Medical Center, Dr. Bessler and his colleagues Dennis L. Fowler, MD, and Peter D. Stevens, MD, used NOTES techniques and laparoscopic assistance to complete the first flexible endoscopic transvaginal cholecystectomy in the United States. They inserted an endoscope through the patient's vaginal wall, then into her body cavity. Using that scope, they detached her gallbladder and removed it through the vagina, which they then sutured. To ensure that the technique was performed as safely as possible, the team used laparoscopic assistance. The first operation involved a few incisions. Soon afterward, the doctors conducted the same surgery on a second patient and made only 1 navel incision measuring 5 mm, which is just wide enough to insert the smallest available standard clip used in laparoscopy.

Based on the successful outcomes of these 2 cases, NOTES seems promising, according to Dr. Bessler. The second patient went home the same day as her surgery and did not need pain medication. Although the idea of operating through a sexual organ might make some people feel uneasy, he explained, the procedure focuses on an area of the vaginal wall near the cervix that has minimal pain sensation and is not involved in sexual function. Dr. Bessler plans to evaluate outcomes after every 10 patients and hopes to soon move into a comparative trial that randomly assigns patients to gallbladder removal by either laparoscopy or NOTES.

At NewYork-Presbyterian Hospital/Weill Cornell Medical Center, colorectal surgeons are tailoring the NOTES approach to the large intestine, entering the patient's body via the rectum. "We're trying to develop means by which diseases of the large intestine can be entirely treated through the channels of the large intestine," said Jeffrey W. Milsom, MD. "We're doing hybrid endoscopic and laparoscopic procedures using 2 or 3 tiny incisions in the abdomen to augment this capability of removing lesions from inside the colon, which would otherwise require bowel resections."

"This is the natural evolution of what we've been doing.... Surgery is becoming more minimized."

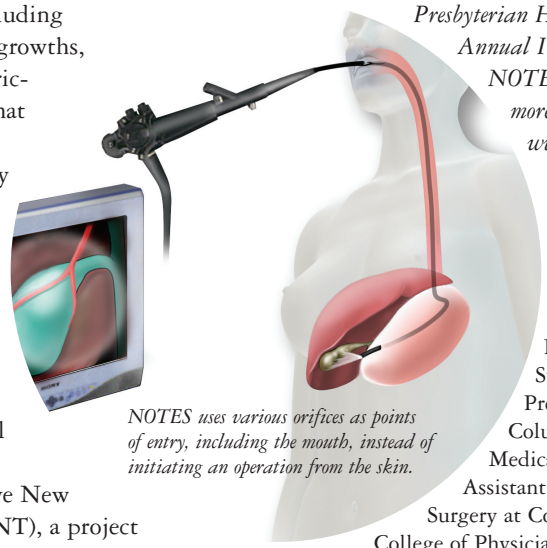
—Jeffrey W. Milsom, MD

The NewYork-Presbyterian/Weill Cornell team consists of Dr. Milsom along with Toyooki Sonoda, MD, Sang Lee, MD, and Alfons Pomp, MD. Together, they have carried out the hybrid procedure in nearly 40 patients. The group is also conducting lab research in animal and cadaver models to develop completely incisionless procedures, techniques that will eventually treat a variety of diseases including benign intestinal growths, rectal prolapse, strictures, infections that lie adjacent to the colon, and possibly even cancer.

Additionally, Dr. Milsom's team is collaborating with bioengineers at NewYork-Presbyterian/Weill Cornell to form Minimally-Invasive New Technologies (MINT), a project that explores how technology can expand minimally invasive surgery. For example, imaging modalities such as 3-dimensional CT scanning, ultrasound, and MRI might couple with endoscopy in the operating room, or newly designed scopes could have improved optics and give surgeons better access to insert necessary tools.

"NOTES is the next natural evolution of what we've been doing over the past 15-plus years," said Dr. Milsom, who bases his current work on the more than 3,000 laparoscopic colon resections he has completed during his career. "Surgery is becoming more and more minimized, as the optics and tools used to carry out surgical actions are all becoming more miniaturized. So, it's more evolutionary than revolutionary."

Editor's Note: On December 10 and 11, 2007, Columbia and Weill Cornell physicians will co-host the NewYork-Presbyterian Hospital First Annual International NOTES™ Course. For more information, visit www.nypdigestive.org.



NOTES uses various orifices as points of entry, including the mouth, instead of initiating an operation from the skin.

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Marc Bessler, MD, hopes to soon move into a trial that randomly assigns patients to gallbladder removal by either laparoscopy or NOTES.

Center right photo courtesy of Marc Bessler, MD.

EUS

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said John Chabot, MD. "Years ago, often we didn't have a definitive diagnosis when performing pancreatic surgery."

Whereas other modalities such as CT and magnetic resonance imaging are used to stage disease in the vascular system, EUS has proved effective in clearly indicating vascular invasion. Many patients are found to have unresectable disease at EUS. With accurate staging, unnecessary exploratory surgery is prevented.

"The technique of EUS has been perfected to the point that we can localize tumors and determine whether there is vascular invasion with a high degree of accuracy. We can help the surgeons determine what type of surgery needs to be done," said Dr. Pochapin. Patients also benefit from the procedure. "The biggest value for patients is avoiding unnecessary surgery," said Dr. Stevens. "It's a devastating setback for the family and the patients when they wake up to find out they are unresectable. We try to avoid that at all costs."

In addition to preventing unnecessary surgery and the associated risks, EUS keeps patients with unresectable disease from being sidetracked from their definitive treatments of chemotherapy and radiation. Patients whose disease is found to be unresectable at EUS "are able to avoid the potential morbidity and risk of mortality associated with surgery," said Dr. Schnoll-Sussman.

Endoscopic ultrasound of the pancreas: In patients with pancreatic cysts, EUS is used both to image the cyst for morphology and to aspirate fluid for analysis by cytology and chemistries.

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NEWYORK-PRESBYTERIAN DIGESTIVE DISEASES

Important news from the Digestive Diseases Services Centers of NewYork-Presbyterian Hospital, leading the way in treatment and research in gastrointestinal, liver and bile duct, pancreatic, and nutritional disorders.

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